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GEOGRAPHIC SCHOOL BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

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Contents for Week of October 18, 1943. Vol. XXII. No. 15.

1. China Goes West to Win
2. Pacific Pin-Point Isles Wear Stars and Stripes
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4. War-Baby Beryllium a New Magic Metal
5. Geo-Graphic Brevities

Alfred T. Palmer

DAUNTLESS WATER-BABIES ARE CHINESE "WARPHANS" OF THE JAPANESE STORM

Although the Japanese hold one-tenth of China's area, they threaten more than one-third of China's people because the population is far denser in the east, with its crowded cities. Pre-war Canton, for example, was so jammed that its people spilled over into the river and made their homes in houseboats.

These waterbabies, living on Canton's Pearl River, are typical of the innocent victims whose back yards the Japanese turned into a battlefield. They lost the relative security in which their family had been able to wrap them warmly (see sister's sweater?), bedeck them with silver ring-necklaces, and give them a puppy. He is a chow, a breed of dog which, like the Pekingese, China cherished for centuries before the rest of the world adopted it.

Every part of China has its "warphans," small war orphans for which the community must provide. Their public care is one of the revolutionary changes of modern China. Formerly families cared for every living relative and public care did not exist (Bulletin No. 1).

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GEOGRAPHIC SCHOOL BULLETIN

HOW TEACHERS MAY OBTAIN THE BULLETINS

The Geographic School Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers in the United States and its possessions for one year upon receipt of 25 cents (stamps or money order); in Canada, 50 cents. Originally entered as second-class matter January 27, 1922; re-entered as of April 27, 1943, Post Office, Washington, D. C., under Act of March 3, 1879. **Copyright, 1943, by National Geographic Society, Washington, D. C. International copyright secured. All rights reserved. Quedan reservados todos los derechos.**

China Goes West to Win

AFTER six years of war, China still holds grimly to nearly nine-tenths of its territory (counting the outer dependencies—Mongolia, Tibet, and Sinkiang).

Japanese invaders, on the other hand, control the leading ports of China's east coast—Tientsin, Tsingtao, Shanghai, Hong Kong, Amoy, Swatow, and Canton. They have overrun much of Shantung, Hopeh, Shansi, Anhwei, and Kiangsu Provinces in northern and east-central China.

The Japanese hold the chief cities, including Peiping, Nanking, Hankow, Hangchow, and Ningpo. They have slammed the back door to China by way of the Burma Road, and broken into the vestibule of southwest China in Yunnan Province. Under enemy bayonets is a captive population of about 175,000,000 Chinese, out of a total population of roughly 450,000,000. Yet there are wide breaks in the Japanese lines, and regions behind these lines in which Chinese guerrillas, civilians, and regular army men harass the enemy.

Japanese Hold Plains and River Valleys, Chinese Hold Mountains

A relief map suggests why the Japanese, despite superior equipment, could overrun only a tenth of China's more than four million square miles. The tide of Japanese conquest, which rolled over the Great Northern Plain of China and into the valleys of the lower Yellow and Yangtze Rivers, slowed down in the approaches to the mountainous west (illustration, inside cover) and south.

In the north, the Yellow River for hundreds of miles is the boundary of Japanese penetration from the north. In the central zone, along the Yangtze life-artery of China, Ichang has marked the limit of the Japanese push toward Chungking, unoccupied China's capital, 500 miles up the river to the west. Between Ichang and Chungking stretch the deep, narrow gorges of a river which ranks as one of the world's most difficult and dangerous transportation routes.

In the south, fighting long has centered around the river port of Canton (illustration, cover). The Japanese have vainly tried to push northward along the Canton-Hankow Railway, vital link between the unoccupied southeast and west.

Westward Migration of Men and Machines

Invasion has speeded China's pre-war movement toward union and modernization, and brought about some of the modern world's most dramatic changes. In Free China, a belated industrial revolution is under way (illustration, next page). Into still primitive central and western provinces, an estimated forty million people —workers, farmers, technicians, and teachers—have escaped from the eastern battle regions. With them came the machines, the skills, and the muscle power for a new way of life.

There nearly 2,000 private factories, with 30 or more workers each, are now operating. The smaller, more or less movable units of the famed Chinese Industrial Co-operative number more than 2,200 in 16 provinces. They are supported by funds from the Chungking government, with guerrilla aid.

But there are political differences and divisions in Free China, with zones of influence in clearly defined geographic sections.

Chungking is the seat of the Nationalist government, controlled by the Kuomintang, a ruling body which has complete legislative, military, judicial, and ex-

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Hans Koester

LOOKING EXACTLY LIKE A RELIEF MAP OF THEMSELVES, CHINA'S KANSU MOUNTAINS TELL TWO TALES OF TRAGEDY

At times these barren mountains have meant famine. Now they are serving as a fortress to hold back invasion. Stripped of forests centuries ago, these mountains in Kansu Province show the tragic effect of soil erosion. The soil, without vegetation to hold it, has washed down from their naked sides and blown away. Flat deposits of loess—windblown soil—pack the valleys and plains many feet deep. Streams cut deep channels through the loess. Grain fields make varicolored patches in the valleys. The apparent absence of villages is explained by troglodyte homes—caves, burrowed 200 feet horizontally into mountain-sides or excavated underground and entered through a well. U. S. Department of Agriculture scientists have studied such Chinese scenes to save America from similar erosion (Bulletin No. 1).

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Pacific Pin-Point Isles Wear Stars and Stripes

THE long list of "coral strands" where U. S. forces have landed is being lengthened by a number of Pacific names, exotic and musical, each contributing to the remote-control defense of the United States.

Off the northeast coast of New Guinea, American troops have taken over Woodlark Island and the near-by Trobriands. These close the ocean gap between New Guinea battlefields and Solomon Islands bases.

In the Ellice Islands, the Marines are holding Funafuti and Nanumea. These bring Americans within bombing range of the Japanese in the Gilbert Islands.

WOODLARK ISLAND A SOUTH PACIFIC GOLD MINE

Green-forested Woodlark Island lies 150 miles off New Guinea's eastern tip. It is 35 miles long and about seven miles wide. Islets peppering the surrounding waters off its coast are hazards to the navigator.

Suloga, at the base of 1,300-foot Suloga Mountain, and Guasopa are the chief harbors, both on the south coast. Two miles inland is Kulamadau, with about 2,500 residents, Woodlark's capital and largest village.

Water is plentiful on the island, along with yams, pumpkins, and pigs. Aside from gardening, the chief occupations of the natives have been preparing copra and mining. Many tons of "greenstone," a stone like jade, have been traded by Woodlark Islanders to their neighbors, who used it for axes and ceremonial clubs.

In the treasure hunt that has swept through the South Pacific for the past half century, nowhere have gold prospectors been better rewarded than on Woodlark. Gold valued at $4,000,000 has been exported from there.

TROBRIAND ISLANDERS SHUN CLOTHES, PLAY CRICKET, BLEACH HAIR

An island of market gardeners and pearl divers, of large villages and easy-going natives—this is Kiriwina, main island of the Trobriand group.

One hundred miles north of New Guinea's eastern tip, Kiriwina is 25 miles from north to south. Off its southern end lies horseshoe-shaped Vakuta, seven miles from tip to tip. A score of smaller islands off Kiriwina's west coast complete the Trobriand group. About 9,000 natives inhabit the Trobriands (illustration, next page).

Losuia, on Kiriwina, is headquarters for the Australian Government station. There a hospital, a jail, and a mission help bring European ideas, and the natives have learned to play cricket.

Yams, rice, taro, and sweet potatoes are garden specialties on Kiriwina. Large quantities are exported to neighboring islands. Yam storage in ventilated, rustic cribs is a native science. The tubers are promptly offered in trade to visitors, along with grass skirts, clubs, paddles, fish, coconuts, and wood carvings beautifully inlaid with mother-of-pearl. Hoping for pearls, divers scoop up large quantities of shell to be exported as mother-of-pearl.

Trobriand Islanders wear a minimum of clothes. Attempts of missionaries to introduce cotton garments were discontinued when the relationship between clothes and poor health was observed.

ELLICE PARADISES OF PALM TREES AND BREEZES

The U. S. Marines have set up military housekeeping on two islands of the

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ecutive powers. It is headed by Generalissimo Chiang Kai-shek. It represents only a single party, the National People's Party of China, founded by the late revolutionary leader, Sun Yat-sen. Officially, this one-party government is only temporary, to serve until a democratic form of government can be established.

The Chinese Communists became a prominent party in the trouble-packed period of confusion that followed the overthrow of China's dynasty in 1911. At one time "Chinese Soviet" governments ruled parts of central and southern provinces. They maintained their own armies. Later the Communist forces were dislodged by the Kuomintang government, and made their famous "northwest trek" into the provinces of Shensi and Kansu. At first the Kuomintang and the Chinese Communists joined forces against the Japanese, but since then breaks have occurred that have flared into open warfare between the two factions of Chinese. Two years ago Chiang Kai-shek's armies forced the Chinese Communist armies from the Yangtze neighborhood back to the Yellow River, into northern Shansi, more or less behind the Japanese lines. There the *Paluchun*, or Communist Eighth Route Army, in spite of shortage of weapons and supplies, carries on guerrilla warfare against the Japanese army of occupation.

NOTE: China is shown on the National Geographic Society's Map of Asia and Adjacent Areas. For additional information, see the following articles in the *National Geographic Magazine*: "China Opens Her Wild West," September, 1942; "Taming 'Flood Dragons' along China's Hwang Ho," February, 1942*; "Burma Road, Back Door to China," November, 1940*. *(Issues marked by an asterisk are included in a special list of Magazines available to teachers at 10¢ each in groups of ten. The list and an order blank are available from the Society's Washington, D. C., headquarters.)*

Bulletin No. 1, October 18, 1943.

Paul G. Guillumette

BY MAKING MACHINES, THE CHINESE ARE REMAKING THEIR COUNTRY

Chinese characters on the bed of this milling machine show that it was made in China. Driven from the crowded agricultural east, the Chinese are building a new pattern of life in the thinly populated west, with its abundant metals and water power. With their own blast furnaces to make their own steel, they can make machines to "roll their own" munitions. Much of Free China's industrial movement is an "underground movement"—often hidden in caves, sometimes behind enemy lines. About 2,000 new privately owned factories are turning out such items as munitions and chemicals, blankets and medical supplies. Factory units of the Chinese Industrial Co-operative are even more numerous, contributing everything from power equipment to medical cotton, from matches, soap, and clothing to plows and trucks.

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Bulgaria Loses King, Finds Dictator

WARS appear to make Bulgaria's throne unsteady. In 1918 the uneasy head of that Balkan nation abdicated in favor of his son. In 1943 the 25-year reign of that son, King Boris III, was ended by death. In theory at least, Boris was succeeded by his son, six-year-old King Simeon II, grandson of the King of Italy. But reports seeping through a rigid censorship hint that the Nazi foreign minister in Bulgaria and several divisions of Nazi troops have taken over for Hitler.

In previous years, Bulgaria's ties with the Axis have been close because of the Balkan nation's trade, Germany, in 1940, took nearly 60 per cent of Bulgaria's exports and was the source of about 70 per cent of the imports.

Strong Ties, Historic and Economic, with Germany

The entire 1941 tobacco crop was bought in advance by Hitler's Reich, which has also been reported active in developing Bulgaria's minerals, especially copper, lead, and zinc. Germany has announced its active share in building roads in Bulgaria, while Italians have helped build rayon factories and cotton mills.

It will be remembered that in the first World War, too, Bulgaria fought on the side of Germany.

With the exception of Albania, Bulgaria is the smallest of the Balkan nations. But this country occupies a geographic spot in southeastern Europe where two great natural routes cross—routes that have been used for invasion and for trade since the days of the Roman Emperor Trajan. One is the overland road southwestward from central Asia by way of Russia and Romania into Greece. The other is the time-worn path northwestward from Asia Minor to central Europe. Jumping the Dardanelles Strait, this follows the battle-marked valleys of southeast Europe from Turkey to the Danube and Germany.

Bulgaria is a nation of farmers. About four-fifths of its more than six million inhabitants make their living from the soil. Farms are for the most part extremely small, and farm implements are generally primitive. White oxen or black water buffaloes pulling plows are seen more frequently than tractors.

Farmers Raise Roses by the Ton

Three F's—farming, forestry, and fishing—provide the country's chief means of support, although industry in recent years has been encouraged by the government, and there are valuable mineral deposits. Coal is the most important mineral product.

With its large proportion of fertile soil and open country, Bulgaria's leading exports are from farms, and include normally tobacco, fruit, sugar, raw silk (illustration, next page), rose oil, wheat and other cereals.

When the world had peace to enjoy luxuries, Bulgaria was famed as perfumer to milady, for years supplying three-fourths of the world's attar of roses. The broad plain known as "The Valley of Roses" was blanketed with pink in season, and for a hectic month rose-farmers daily gathered tons of damask rose petals. Heated in huge copper retorts, 200 pounds of petals yielded one ounce of attar, the fragrant rose oil used as a base for many perfumes of non-rose odors.

As a result of wars, boundary changes in Bulgaria have occurred so frequently that the nation has been compared to an accordion in action. The country won independence from Turkey in 1908. It gained considerable ground in the

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Ellice group, less than a two-hour bomber flight from the Japanese in the neighboring Gilbert Islands. In peacetime both groups, annexed by the British in 1892, were part of a British Crown Colony.

The Ellice group consists of nine main clusters of coral islets littered over 360 miles of the Pacific. Their combined area would total only 14 square miles. They are peopled by some 4,000 light brown Polynesians whose speech is similiar to that of the Samoans.

They live chiefly by fishing, farming, and preparing copra for export. Under British administration only natives were permitted to own coconut plantations.

Funafuti, where the Marines first established themselves, lies somewhat south of the center of the group, for which it has been the government headquarters. Its pre-war population was about 350 Polynesians and one lone European. It is a low coral atoll consisting of some 30 islets arranged around a central lagoon with a porkchop outline. The lagoon, 13 miles long and ten miles across at its greatest width, offers good landing facilities for seaplanes. It has several entrances safe for ships. The islands are shaggy with coconut palms, many of which are 60 to 80 feet tall.

Last month the Marines took over Nanumea, northernmost of the Ellice group. Nanumea also is a family group of low coral islets. The highest elevation is 90 feet. Sighted in 1781, this was the first of the group to be discovered by Europeans. It is the most populous, counting nearly 800 inhabitants.

Northeasterly trade winds make the April-October season the most comfortable part of the year in these usually peaceful unhurried islands, which might ordinarily model for portraits of South Sea island paradises.

Bulletin No. 2, October 18, 1943.

Alan J. Villiers

EVERY MEAL IS A PEARL-HANDLED PICNIC FOR TROBRIAND PEROXIDE BLONDS

In the perpetual summer of Kiriwina, chief island of the Trobriand group, the menfolk rarely go into their steep-roofed thatched houses during the day. For a meal they cluster around the family's big wooden bowl of yams or taro in their clean village clearing. For spoons they use smooth-edged pearl shells. Their upper arms are tightly braceleted to make the biceps appear to bulge. Their favorite beauty treatment is to bleach their hair with peroxide (left and center). Before trade with Europeans made this bleach available, they used to lighten their locks with lime. Now peroxide is a highly valued item of import, ranking with stick tobacco.

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War-Baby Beryllium a New Magic Metal

TO that famous flighty family of highflying, lightweight metals—aluminum and magnesium—add the new American war-baby, beryllium.

Emeralds, aquamarines, and beryls contain beryllium, but chunks of beryl of non-gem quality are the commercial source of the metal (illustration, next page).

A German scientist in 1828 succeeded in separating some beryllium from most of its ore. (The element never occurs in a pure state in nature.) But no practical use was found for this chemical rarity until the past decade or two.

Lighter than Aluminum, Harder than Steel, Brittle as Glass

Since that partial unveiling, 115 years ago, beryllium has been revealed as the lightest of all the metals except lithium; it is only one-third the weight of aluminum, the featherweight wonder of the early 20th century. Beryllium is harder than steel. It does not rust or tarnish. It would be the answer to the airplane designer's prayer—but it is brittle. A piece of the metal dropped on the floor will shatter like glass.

Metallurgists are searching for a process that will make the metal retain its lightness and hardness while losing its brittleness. Meanwhile, it is used exclusively as an alloy, chiefly with copper. Mixing 2 per cent beryllium and 98 per cent copper or nickel changes these relatively "soft" metals into alloys harder, stronger, and tougher than the best steel. The rust-proof quality is also inherited by the alloys.

Such a beryllium-copper alloy is speeding the work of supplying guns to United Nations armies. If made of steel, every part of a big gun must be rough-cast, then slowly and laboriously machined down to the finished form. Beryllium-copper, malleable until heated, can be more easily finished. The British designed, built models, and finally started on mass production of a new gun of this wonder metal alloy within two months.

In many war uses beryllium-copper is replacing bronze (an alloy of copper and tin), now scarce because tin supplies from the Orient have been cut off by the Japanese.

Holds Its Spring, Holds Its Spark

In spite of its brilliant performance in numerous war jobs, beryllium alloys give off no boastful sparks. Because of this non-sparking quality, beryllium-copper is used to make safety tools—hammers, chisels, shovels—for use in powder factories and other such places where a spark from a steel tool might cause an explosion.

Beryllium alloys never tire—or practically never. Beryllium-copper, used for the spring of a precision instrument, will spring back at least a billion times. By contrast, the finest bronze spring will work about 400,000 times and then break. Moreover, unlike many other metals formerly used in precision instruments, beryllium-copper parts will not "stretch"—elongate like worn-out rubber after prolonged use. These qualities make the new metal alloy of special value in the springs in fuses in shells, in oxygen gauges needed by aviators for high-altitude flying, in the altimeters of airplanes. The gauges, instruments, and precision parts of airplanes, tanks, ships, and autos are the nerve centers that control their operation. Beryllium assures the longest possible life to these parts.

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First Balkan War in 1912, when Bulgaria and allied Greeks, Serbs, and Montenegrins fought Turkey. But the Second Balkan War, in 1913, wiped out many of these gains.

Bulgaria's entering the World War on the side of Germany and Turkey resulted in the loss to Greece of a valuable front on the Aegean Sea. Bulgaria did not accept this loss as final.

One of Bulgaria's demands for lost territory was met in the 1940 boundary juggling. At that time Bulgaria's area was 39,825 square miles, about the same as that of the State of Virginia. Then Romania ceded Bulgaria 2,800 square miles of the Dobruja area, along Bulgaria's northeastern frontier. Germany's invasion of Greece and Yugoslavia encouraged Bulgaria to occupy the Macedonian district in Yugoslavia and the Thracian region in Greece.

Georg Gr. Paskoff

SILK POSIES GROW ON THESE TWIG BOUQUETS

Bulgaria produces an outdoor crop of some three million pounds of silk cocoons a year. A considerable acreage of this small Balkan nation is planted in mulberry trees to supply tender leaves for silkworm appetites. The worms from an ounce of eggs will eat a ton of leaves in their lifetime. When mature, the worm yearns to climb above the level of its feeding tray. Bulgarians put out bunches of switches for this purpose. Climbing to its selected twig, the silkworm spends three or four days enwrapping itself in coils of silk filament. The housewife then plunges the cocoon into boiling water or steam to kill the worm before it can become a moth and bite its way out of the silk. The creamy cocoon is dried and unreeled into one continuous silk thread. The Bulgarian girl's traditional costume of fine homespun wool and heavy embroidery is becoming as rare in her country as silk is in the United States.

Bulletin No. 3, October 18, 1943.

At War with U. S.

As an ally of the Axis, Bulgaria declared war on the United States on December 13, 1941, after Pearl Harbor. The country is also at war with the United Kingdom, the Union of South Africa, Australia, Haiti, Nicaragua, and the fighting Czechs, Greeks, and Yugoslavs.

Bulgaria has not declared war on the U.S.S.R. although she signed the Anti-Comintern Pact in 1941. The Bulgarian people, on the whole, are considered to be sympathetic with the Russians as related Slavs. Before the war, Soviet engineers helped to build the Black Sea airport at Burgas.

NOTE: Bulgaria is shown on the National Geographic Society's Map of Europe and the Near East.

For further information, see "Bulgaria, Farm Land without a Farmhouse," in the *National Geographic Magazine* for August, 1932; and these GEOGRAPHIC SCHOOL BULLETINS: "Quick Gazetteer of 'Captive' Bulgarian Towns," March 31, 1941; "Pivotal Bulgaria Is Smallest of Independent Balkans," March 3, 1941; and "Bulgaria's Trade Dominated by Germany," January 27, 1941.

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Geo-Graphic Brevities

LOWLY MILKWEED STARS AS KAPOK SUBSTITUTE

GRAZING herds spurn milkweed, with its bitter milky juice and seed pod of downy fluff. Farmers groan to think of the land it lays waste.

But meadows thickest with the milkweed scourge may soon become "acres of diamonds" for the farmer from coast to coast. Already they are being turned to profit in Michigan.

Milkweed's Cinderella act results from the similarity of its floss to kapok. Its waxy fiber repels moisture and locks air within tiny cells; it is buoyant, resilient, and an insulator of heat and sound. These are the very qualities that have built United States imports of kapok to 9,000 tons in recent peacetime years.

Kapok was imported almost exclusively from Java and neighboring islands of the Netherlands Indies. Its foremost civilian use was as a filler in upholstered furniture. Japanese invasion early in 1942 closed off the sources of fifteen-sixteenths of United States imports of kapok. The same Japanese aggression greatly multiplied this country's need for the fiber, for military use in mattresses, life preservers, aviators' suits, for lining planes and tanks.

Rarely cultivated before, wild milkweed spreads irrepressibly from creeping roots as well as from breeze-wafted seeds. One of its several promises of usefulness is seen in the fact that its seven-foot roots might slow up soil erosion.

There are some 1,900 known species of this international weed in the world. Pods of the scores of varieties in the United States bear floss conservatively estimated at over 2,000,000 tons annually. The problem is how to collect it.

American inventiveness, taking a tip from cotton, has already devised a milkweed gin and other machinery to eliminate much hand labor.

A single milkweed pod yields 75,000 fibers. A cultivated acre might yield 300 pounds of fibers—enough to fill 100 life-preserver jackets, each capable of supporting a man in the water for 100 hours. The Navy alone can use all the milkweed fiber that is likely to be collected during the war.

Now that milkweed has been "discovered," it is found to be as versatile as the soy bean. It is a possible source of rubber substitute, of rayon-type yarn for cloth, of woody fiber for plastics, of oil for paints and varnishes, of meal for feeding livestock.

NAPLES: ITALY'S NO. 3 CITY AND NO. 1 PORT

IN capturing Naples, the Allies have provided themselves with the greatest port in Italy. Genoa in the north is a close rival, but in most years Naples receives more big ships and more tonnage than any other Italian port.

This city, situated halfway down the shin of the Italian boot, is the commercial port of Rome, 150 miles northwest. With a population of 875,000, it about equals Baltimore in size. Only two Italian cities are larger, Rome and Milan.

Outside of shipping, the chief peacetime occupations are entertaining tourists and manufacturing cloth, coral and tortoise-shell products, kid gloves, and macaroni.

The port of Naples occupies a small strip on the north coast of the great Bay of Naples (illustration, next page), which opens eastward between the Island of

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Because beryllium-copper springs will not rust, they are especially valuable and durable under the rust-forming conditions met in warfare. Beryllium parts in the construction of refrigerators, vacuum cleaners, cameras, clocks, watches, and thermostats likewise would give longer service to civilians.

Germans Long Had Beryllium Stranglehold

The processes for preparing beryllium for commercial use were for long a monopoly of German firms. Under their control the metal sold for about $120 a pound.

By a mystery-thriller series of adventures and intrigues, the German monopoly has recently been broken and two beryllium companies are now operating in the United States. Their competition has lowered the price to $45 a pound.

Discovery this year of a veritable mountain of beryllium ore in southern Oregon puts the United States in a position to forge ahead with the development of this tireless, tarnishless metal in its own back yard. This deposit is so far rated as the world's largest deposit.

Normally beryllium ores are imported from Brazil, Argentina, and South Africa. The U.S.S.R. has abundant deposits in the Ural Mountains. The United Nations have an advantage over the Axis countries in their larger supplies of the metal. Hitler must rely on one small deposit in the Austrian Tyrol.

Presumably to aid the Nazi war machine by remedying this shortage, just before Pearl Harbor "Swiss watchmakers" began placing orders with American firms for quantities of beryllium large enough to supply beryllium parts for all the watches in the world. These orders were not filled.

NOTE: See also, "Metal Sinews of Strength," in the *National Geographic Magazine*, April, 1942.

Bulletin No. 4, October 18, 1943.

Willard R. Culver

ONE OF SCIENCE'S "SERMONS IN STONES" CONCERNS BERYLLIUM'S SOURCE

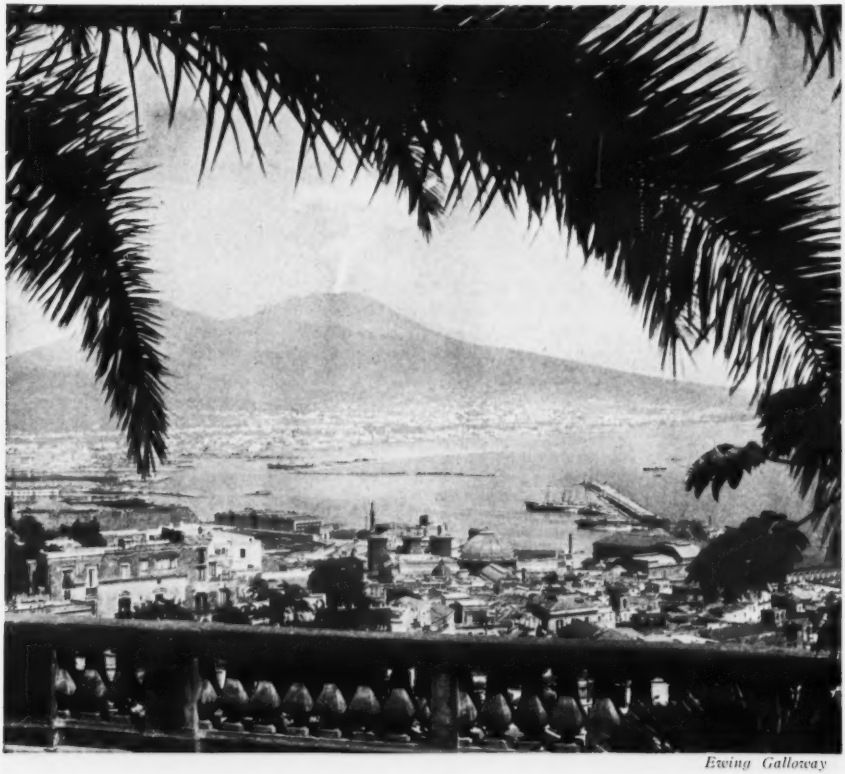
The only ore from which the miracle metal beryllium comes is beryl, the stone family of which the emerald is the richest, most brilliant relative. The beryl crystal, whether large or small, always has six sides. Its usual color shades from pale green to grayish white. Beryllium is most commonly used in beryllium-copper alloys, which are golden yellow but lighter, harder, and stronger than gold.

Ischia and the Island of Capri, at least 15 miles apart.

On the east shore, southeast of Naples, stands the mammoth natural lighthouse which war has not been able to black out—Vesuvius, glowing at night, smoking in the day. Travelers retain an indelible memory of entering the bay from the Mediterranean, the city of Naples rising like an amphitheater against the hills on the left, the looming volcano now straight ahead, now on the right. In peacetime the fishing fleet added to the bay's liveliness—the fishermen standing as they rowed out to sea and waving a greeting to passing ships.

So large is the bay that it offers little shelter to ships. Naples is a man-made harbor with eight moles extending in various directions to protect the anchorage. The waterfront, before retreating Nazis devastated it, was amply equipped with railroads, grain elevators, coal sheds, and warehouses.

Bulletin No. 5, October 18, 1943.



Ewing Galloway

SONG AND SCENERY BROUGHT FAME TO NAPLES; WAR BROUGHT RUIN

Beautiful scenery and music characterized Naples before war brought bombing and wreckage. Neapolitan airs like "Santa Lucia" and bagpipers playing their Christmas songs in the streets have contributed to Naples' musical reputation. The San Carlo Theater, resounding with the works of Donizetti, Bellini, and Rossini, made the city "the mother of modern opera." But it was sight, not sound, that inspired the admiring adage, "See Naples and die." Visitors since Virgil's day have admired the city's hillside site, the blue bay's southward curve to Vesuvius, with excavated Pompeii and Herculaneum at its feet. A high valley separates the volcanic cone (middle background) from Monte Somma to the north (left). A pre-bombing photograph of Italy's chief port, from which many an Italian emigrant sailed for the United States, reveals the mile-long mole of San Vincenzo (farthest right), and the waterfront cluster of famous landmarks (center)—the three columnar towers of 13th-century Castel Nuovo, the big dome of the Galleria Umberto Primo, the smaller dome of the Church of San Francesco di Paola, the Palazzo Reale between, and the San Carlo Opera House. The palms are reminders that, although January brings snow, subtropical Naples' summer temperatures shimmer around 100 degrees.

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